

# Corneal Contact Lenses

## Special Value in Severe Anisometropia in Children

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SEVERAL ARTICLES on corneal contact lenses have appeared in the medical literature in recent years. There is no intention here to add another series of statistics, but rather to emphasize the value of careful selection of patients and proper fitting, especially in the case of children with severe anisometropia.

Westsmith<sup>5</sup> recently summarized a questionnaire survey of patients who had been fitted with corneal contact lenses; fewer than 50 per cent responded, and among these the rejection rate (those dissatisfied with the lenses) was 9.7 per cent. Among 339 patients at Greens' Eye Hospital, all of them completely followed (which is in itself evidence of general satisfaction) the proportion who rejected the corneal lenses was 3.2 per cent or, if the admittedly experimental cases are eliminated, 2.3 per cent.

Most of the patients are young adults; 33 are over 61 years of age, 21 are under 15, the youngest 5½ years old. Rejections were twice as frequent among the 146 males as among the 193 females. Nearly as many patients use corneal lenses for medical reasons (45 per cent) as for cosmetic reasons (48.5 per cent); a few (6.5 per cent) wanted them primarily for participation in sports. The great majority wear the lenses 13 to 16 hours a day; only 5 wear them less than eight hours.

Nine patients have rejected the lenses, four of them after less than two months' trial. Two objected to "stinging"; 2 had diplopia; 2 found allergic reactions aggravated; 1 was senile, and 1 found them "too much trouble." In the other three cases the use of corneal lenses had been considered experimental. In one case for optic atrophy, in another for a telescopic lens arrangement, and in the third for healed corneal ulcer, which interfered with the fitting.

The eye defects in these cases are best considered by the number of eyes affected, as summarized in Table 1. A special note should be made with regard to monocular aphakia. Spaeth<sup>3</sup> and others have stated their preference for the corneal contact lens in this condition, though Ogle, Burian and Bannon<sup>2</sup> insist that it is rarely possible to reduce aniseikonia (difference in the size and shape of the images of each eye) to less than 9 per cent; patients who

• Careful selection of patients and skillful fitting result in a high rate of success with corneal contact lenses—over 96 per cent in 339 patients treated in the present series. The lenses were especially valuable in anisometropia in children (11 cases). Children can be taught to care for contact lenses and insert and remove them for themselves.

are comfortable in spite of the aniseikonia, these investigators believe, have some degree of suppression or are satisfied with confused peripheral vision. Be that as it may, most patients feel comfortable and have better vision with a corneal lens. None of the monocular aphakic patients showed any suppression as tested on the major amblyoscope.

This presentation is intended to emphasize especially the value of corneal lenses for children. Eleven cases of severe anisometropia (difference in refractive power of the eyes) in children are summarized in Table 2. This defect is sometimes discovered because of a deviating eye, in other cases through acuity tests at school. These children were remarkably cooperative, as were their parents, who were greatly encouraged by demonstrable improvement and assisted willingly in maintaining patching of the good eye to improve the amblyopic one. The improvement is maintained if the eyes are straight or can be surgically straightened, though repeated patching may be necessary in some cases. The visual acuity in the anisometropic eye is much better with a corneal contact lens than with a spectacle lens.

Corneal contact lenses may be useful, too, in severe myopia of both eyes. Some children in schools

TABLE 1.—Rejection of Corneal Contact Lenses in 339 Cases

Condition	No. of Eyes	Rejections	
		No.	Per Cent
Myopia (more than half over 5 diopters) .....	320	4	1.25
Hyperopia (majority over 3 diopters) .....	43	3	7
Astigmatism, myopic or hyperopic (all over 1.5 diopters) .....	58	1	1.7
Aphakia, monocular or binocular .....	83	3	2.8
Keratoconus .....	25	0	0
Anisometropia .....	23	0	0
Corneal scarring .....	6	1	16.6

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TABLE 2.—Anisometropia in Children Treated with Corneal Contact Lenses

Age	Sex	Eye Defects	Treatment	Corrected Vision
5½	M	Right: Divergent strabismus 40Δ due to right severe myopia.	Contact lens, now worn all day. Normal left eye patched. Strabismus to be surgically corrected.	Right, 20/400. Exotropia 25Δ and varying.
6	F	Right: Vision 20/350, divergent strabismus 6Δ, hypertropia 4Δ.	Contact lens worn all day. Left eye patched. Treatment being continued.	Right, 20/120.
7	M	Right: Vision 20/1000, severe myopia, divergent strabismus 12Δ, hypotropia 10Δ.	Contact lens worn all day, left eye patched daily after school. Strabismus surgically corrected.	Eyes straight. Right, 20/120.
7	M	Right: Vision 20/1000, severe myopia, convergent strabismus 15Δ.	Contact lens worn all day, patching for long periods refused. Strabismus to be surgically corrected.	Right, 20/40.
7	F	Right: Vision 20/350, severe myopia, convergent strabismus 30Δ.	Contact lens worn all day, left eye patched after school. Right strabismus surgically corrected.	Right, 20/120, eyes straight.
8	F	Left: Vision 20/1000, severe myopia, eyes straight.	Contact lens worn all day, no patching.	Left, 20/60.
7	M	Left: Vision 20/200, severe mixed astigmatism, eyes straight.	Contact lens worn all day, patch right eye.	Left, 20/25.
8	M	Left: Traumatic cataract.	Cataract removed, contact lens worn all day.	Left, 20/20.
9	M	Left: Vision 20/1000, severe myopia, eyes straight.	Contact lens worn all day, right eye patched.	Left, 20/60.
10	F	Left: Vision 20/200, severe myopia, eyes straight.	Contact lens worn all day.	Left, 20/25.
12	M	Right: Traumatic cataract.	Cataract removed. Contact lens worn all day.	Right, 20/20.

Δ = prism diopters.

for the partially sighted have been sufficiently improved through these lenses to transfer to public schools.

The most dramatic improvement in visual acuity is obtained in keratoconus (conical protrusion of the cornea), although fitting is the most difficult in this condition. Patients who formerly tolerated a scleral lens for no more than six hours at a time were able to wear a corneal contact lens for 16 hours a day with minimal corneal irritation.

During the fitting period, children tend to lose lenses frequently, but as they begin wearing them for longer periods they also learn to care for them and they lose them less often. Insertion and removal of the lenses by the parents is another fitting prob-

lem. If parents are willing, children over 10 years of age are trained to handle the lenses for themselves.

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